

INVENTORY CONTROL SYSTEM

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This Application claims priority to British Application No. GB0716108.6, filed Aug. 17, 2007, the specification of which is incorporated herein by reference.

BACKGROUND

[0002] 1. Field of the Invention

[0003] The field relates to a method for manufacturing an inventory item storage receptacle for an inventory control system and in particular, but not exclusively, to an inventory control system for monitoring the use of hand tools, surgical instruments and other items. The field also relates to an inventory control system including at least one of the storage receptacles.

[0004] 2. Description of the Related Technology

[0005] An inventory control system may be useful when it is important to monitor the usage of hand tools, and to ensure that they are returned to storage after use. This can help to ensure that tools are not lost or stolen. Such a system is particularly important when tools are used for repairing or maintaining aircraft engines, as any tools left inside the engine after completion of the job could cause catastrophic damage. Similarly, in the case of surgical tools, it is essential to ensure that no tools are left inside a patient after an operation.

[0006] One method of monitoring the use of tools is to store the tools in a container having designated storage compartments for each and every specific tool. For example, the container may be a tool box having drawers with foam liner receptacles, with cut-outs for each of the tools. Using such a container, it is a relatively simple matter for a supervisor to check that all the tools are present by visually inspecting each drawer in turn, to ensure that all the spaces are filled.

[0007] However a problem with tool storage systems that use foam inserts is that to store new tools it is necessary to manufacture a new foam insert. This involves measuring the dimensions of the new tools, producing a drawing of the new layout and then cutting the new design into the foam. The process can be very time consuming. When you consider that some large companies have multiple tool cabinets (often hundreds and in some cases thousands), each with several drawers of tools, when there are regular tool changes, this can lead to substantial cost and disruption.

[0008] Also, foam is an expensive material, it is expensive to store the stock material since each insert is typically around 100 mm in depth, which requires a significant amount of storage space for large scale manufacturing operations, and it deteriorates quite quickly in use. Furthermore, for surgical applications, surgical instrument cabinets are often surgically steamed cleaned in an autoclave, wherein temperatures exceed 300 C and the materials are wetted. Foam inserts are not suitable for such cleaning processes and due to their porous nature may absorb harmful contaminants. In industrial settings the foam inserts may absorb other liquids such as oil and other chemicals which can look unsightly, may irritate the skin of a user and may corrode or dissolve the foam.

[0009] These problems also occur in tool cabinets that are intelligent, that is, tool cabinets that include some kind of

sensor system to detect the presence of tools, such as the cabinet disclosed in WO 2005/028165.

SUMMARY OF CERTAIN INVENTIVE ASPECTS

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] An embodiment of the invention Certain inventive aspects will now be described, by way of example, with reference to the accompanying drawings, in which:

[0011] FIG. 1 is a perspective view of a tool cabinet with an open tool drawer;

[0012] FIG. 2a is a perspective view from above of the drawer shown in FIG. 1;

[0013] FIG. 2b is an perspective view of the tool cabinet from the rear;

[0014] FIG. 3 is a plan view showing the layout of another tool drawer;

[0015] FIG. 4 is a view from below, showing the layout of tool sensors in the drawer shown in FIG. 3;

[0016] FIG. 5 is an enlarged perspective view of a swipe card access system, a local display and an input pad;

[0017] FIG. 6 is a flow diagram illustrating the steps in a vacuum forming process for producing a tool container liner for storing tools therein;

[0018] FIG. 7 is a flow diagram illustrating the steps in a moulding process for producing a tool container liner for storing tools therein;

[0019] FIG. 8 is a schematic diagram illustrating the main components of an inventory control system; and

[0020] FIG. 9 is a flow diagram showing the main steps of an inventory control process.

DETAILED DESCRIPTION OF CERTAIN INVENTIVE EMBODIMENTS

[0021] Certain embodiments seek to provide a method for manufacturing an inventory item storage receptacle and a inventory control system including the storage receptacle.

[0022] According to some embodiments a method for manufacturing an inventory item storage receptacle for an inventory control system includes at least one of said storage receptacles, a monitoring system for monitoring the removal and replacement of the inventory items from the storage locations, and a data processing system for recording the removal and replacement of inventory items from the recesses according to signals received from the monitoring system, wherein the storage receptacle includes a plurality of inventory item storage locations, wherein each of the storage location comprises an individually-shaped recess for receiving a specific inventory item, the shape of the recess being matched to the shape of the inventory item, said method including providing a quantity of mouldable material to form a body for the receptacle, moulding the mouldable material around each of the inventory items to be stored in the receptacle, or blanks/ equivalents thereof, thereby forming individually-shaped recesses in the body that are matched to the inventory items, and setting the mouldable material to fix the shape of the receptacle.

[0023] This provides a quick and easy way of replacing a storage receptacle, such as a tool storage tray or drawer liner. It is a process that can be carried out by owners of the inventory control system rather than having to go back to the original manufacturer.

[0024] The mouldable material can be sheet plastics material and the process can include heating the plastics material